
NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

NASA-16326 (October 2003)
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Superseding NASA-16326
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SECTION TABLE OF CONTENTS

DIVISION 16 - ELECTRICAL

SECTION 16326

MEDIUM-VOLTAGE AIR-BREAK DISCONNECT SWITCHES

10/03

PART 1 GENERAL

- 1.1 REFERENCES
- 1.2 SUBMITTALS
- 1.3 GENERAL REQUIREMENTS

PART 2 PRODUCTS

- 2.1 SWITCHES
- 2.2 CONTACTS
- 2.3 HANDLES
- 2.4 HOOK STICKS

PART 3 EXECUTION

- 3.1 INSTALLATION
- 3.2 GROUNDING

-- End of Section Table of Contents --

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SECTION 16326

MEDIUM-VOLTAGE AIR-BREAK DISCONNECT SWITCHES
10/03

NOTE: Delete, revise, or add to the text in this
section to cover project requirements. Notes are
for designer information and will not appear in the
final project specification.

This section covers air-break, single-pole and
gang-operated disconnecting/isolating switches 2.4
kilovolts and above. Drawing should indicate
ratings and installation details.

PART 1 GENERAL

1.1 REFERENCES

Not Used

1.2 SUBMITTALS

NOTE: Review submittal description (SD) definitions
in Section 01330 SUBMITTAL PROCEDURES and edit the
following list to reflect only the submittals
required for the project. Submittals should be kept
to the minimum required for adequate quality
control. Include a columnar list of appropriate
products and tests beneath each submittal
description.

The following shall be submitted in accordance with Section 01330 SUBMITTAL
PROCEDURES in sufficient detail to show full compliance with the
specification:

SD-02 Shop Drawings

Fabrication Drawings shall be submitted in accordance with
paragraph entitled, "General Requirements," of this section.

Installation Drawings shall be submitted in accordance with the
paragraph entitled, "Installation," of this section.

SD-03 Product Data

Equipment and performance data shall be submitted for air-break disconnect switches including life, test, system functional flows, safety features, and mechanical automated details.

Manufacturer's catalog data shall be submitted for the following items:

Air-Break Disconnect Switches
Contacts
Handles
Hook Sticks

SD-08 Manufacturer's Instructions

Manufacturer's instructions shall be submitted for Air-Break Disconnect Switches including special provisions required to install equipment components and system packages. Special notices shall detail impedances, hazards and safety precautions.

SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals shall be submitted for the following equipment:

Air-Break Disconnect Switches

1.3 GENERAL REQUIREMENTS

NOTE: If Section 16003 GENERAL ELECTRICAL PROVISIONS is not included in the project specification, applicable requirements therefrom should be inserted and the following paragraph deleted.

Section 16003 GENERAL ELECTRICAL PROVISIONS applies to work specified in this section.

Fabrication Drawings shall be submitted for air-break disconnect switches consisting of fabrication and assembly details to be performed in the factory.

PART 2 PRODUCTS

2.1 SWITCHES

Air-break disconnect switches shall be the types and ratings indicated and shall be provided complete, as an integral unit consisting of a galvanized channel base, insulators, contacts, live parts, and switch blade. Mechanism shall be the quick-break type. Switches may be three-phase, gang-operated, or single-pole, hook-stick-operated, as required by the application and installation requirements or as indicated. If motor-operated air-break switches are used, the installation shall be as indicated.

2.2 CONTACTS

Switch contacts shall be a self-cleaning design to prevent galling, and the

switch blade shall have a positive latch to prevent accidental opening.

2.3 HANDLES

Operating handles of gang-operated switches shall be located approximately 5-feet 1500 millimeter above the ground and shall be provided with suitable attachments for padlocking the switches in both open and closed positions.

2.4 HOOK STICKS

**NOTE: Operation & Maintenance organization may deem
this sentence unnecessary.**

One hook stick of suitable design and voltage rating shall be provided for each group of three single-pole hook-stick-operated switches.

PART 3 EXECUTION

3.1 INSTALLATION

Switches shall be mounted in accordance with the detailed instructions of the manufacturer. Installation shall include necessary timbers, hardware, insulators, and connections to the line wire or bus.

Prior to final acceptance the switch shall be energized and the circuit loaded (to the maximum load possible, but not less than 10 percent of expected full load) for a minimum of 10 minutes and the temperature measured, with a non-contact device, to verify contact pressure and alignment. The temperature detector shall be accurate within 0.5 degrees C. Each phase temperature shall be less than 5 degrees C above ambient and within 3 C degrees of each other. Temperatures outside these values warrant investigation.

Installation Drawings shall be submitted for air-break switches.

3.2 GROUNDING

**NOTE: In locations where existing underground
utilities, equipment or structures may be damaged,
ground rod installation should be accomplished using
the water jetting method.**

Switches and operating mechanisms shall be solidly bonded to the station structural steel or to the ground counterpoise or driven ground rods; joints in the operating mechanisms shall be flexible.

-- End of Section --